Corr. JP 2002-500173

PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

23

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : A61K 7/00 | A2

(11) International Publication Number: **WO 99/34768**

(43) International Publication Date: 15 July 1999 (15.07.99)

(21) International Application Number: PCT/EP99/00149

(22) International Filing Date: 6 January 1999 (06.01.99)

(30) Priority Data:
9800591.1 12 January 1998 (12.01.98) GB

(71) Applicant *(for AU BB CA CY GB GH GM IE IL KE LC LK LS MN MW NZ SD SG SL SZ TT UG ZW only)*: UNILEVER PLC [GB/GB]; Unilever House, Blackfriars, London EC4P 4BQ (GB).

(71) Applicant *(for all designated States except AU BB CA CY GB GH GM IE IL IN KE LC LK LS MN MW NZ SD SG SL SZ TT UG ZW)*: UNILEVER N.V. [NL/NL]; Weena 455, NL-3013 AL Rotterdam (NL).

(71) Applicant *(for IN only)*: HINDUSTAN LEVER LTD [IN/IN]; Hindustan Lever House, 165-166 Backbay Reclamation, Mumbai 400 020 (IN).

(72) Inventors: ISHIKAWA, Sachie; Nippon Lever B.V., Utsunomiya Factory, 38, Haga-dai, Haga-cho, Haga-gun, Tochigi-ken 321-33 (JP). KASAI, Masahiro; Nippon Lever B.V., Utsunomiya Factory, 38, Haga-dai, Haga-cho, Haga-gun, Tochigi-ken 321-33 (JP). SATO, Shin; Nippon Lever B.V., Utsunomiya Factory, 38, Haga-dai, Haga-cho, Haga-gun, Tochigi-ken 321-33 (JP).

(74) Agent: GRIFFITHS, Helen, Sarah; Unilever plc, Patent Dept., Colworth House, Sharnbrook, Bedford MK44 1LQ (GB).

(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published
Without international search report and to be republished upon receipt of that report.

(54) Title: HAIR CONDITIONING COMPOSITION

(57) Abstract

A hair conditioning composition having improved wet stage conditioning performance comprising: (a) as a principal conditioning agent, an acid–neutralised amidoamine compound, wherein the amidoamine compound has general structural formula (I): R1 – C (O) – NH– R2 – N(R3)(R4); wherein R1 is a fatty acid chain containing from 12 to 22 carbon atoms, R2 is an alkylene group containing from one to four carbon atoms, and R3 and R4 are, independently, an alkyl group having from one to four carbon atoms, and (b) has an auxiliary conditioning agent, a silicone component which comprises a silicone gum with a viscosity greater than 1 Mcs, a silicone fluid with a viscosity of less than 100 kcs, and an amino functionalised silicone, and (c) an aqueous carrier.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	**ES**	Spain	**LS**	Lesotho	**SI**	Slovenia
AM	Armenia	**FI**	Finland	**LT**	Lithuania	**SK**	Slovakia
AT	Austria	**FR**	France	**LU**	Luxembourg	**SN**	Senegal
AU	Australia	**GA**	Gabon	**LV**	Latvia	**SZ**	Swaziland
AZ	Azerbaijan	**GB**	United Kingdom	**MC**	Monaco	**TD**	Chad
BA	Bosnia and Herzegovina	**GE**	Georgia	**MD**	Republic of Moldova	**TG**	Togo
BB	Barbados	**GH**	Ghana	**MG**	Madagascar	**TJ**	Tajikistan
BE	Belgium	**GN**	Guinea	**MK**	The former Yugoslav Republic of Macedonia	**TM**	Turkmenistan
BF	Burkina Faso	**GR**	Greece			**TR**	Turkey
BG	Bulgaria	**HU**	Hungary	**ML**	Mali	**TT**	Trinidad and Tobago
BJ	Benin	**IE**	Ireland	**MN**	Mongolia	**UA**	Ukraine
BR	Brazil	**IL**	Israel	**MR**	Mauritania	**UG**	Uganda
BY	Belarus	**IS**	Iceland	**MW**	Malawi	**US**	United States of America
CA	Canada	**IT**	Italy	**MX**	Mexico	**UZ**	Uzbekistan
CF	Central African Republic	**JP**	Japan	**NE**	Niger	**VN**	Viet Nam
CG	Congo	**KE**	Kenya	**NL**	Netherlands	**YU**	Yugoslavia
CH	Switzerland	**KG**	Kyrgyzstan	**NO**	Norway	**ZW**	Zimbabwe
CI	Côte d'Ivoire	**KP**	Democratic People's Republic of Korea	**NZ**	New Zealand		
CM	Cameroon			**PL**	Poland		
CN	China	**KR**	Republic of Korea	**PT**	Portugal		
CU	Cuba	**KZ**	Kazakstan	**RO**	Romania		
CZ	Czech Republic	**LC**	Saint Lucia	**RU**	Russian Federation		
DE	Germany	**LI**	Liechtenstein	**SD**	Sudan		
DK	Denmark	**LK**	Sri Lanka	**SE**	Sweden		
EE	Estonia	**LR**	Liberia	**SG**	Singapore		

HAIR CONDITIONING COMPOSITION

Field of the Invention

This invention relates to hair conditioning compositions intended to be rinsed off. In particular, the invention relates to hair conditioning compositions having improved wet-stage conditioning performance and incorporating tertiary amidoamine salts in conjunction with a specific mixture of silicones as an auxiliary conditioning agent.

Background and Prior Art

Hair conditioning compositions, such as creme rinses, are well known in the art for improving the combing properties of wet hair and dry hair.

These conditioning compositions typically are aqueous emulsions including a cationic compound, like a quaternary ammonium compound, as the principal conditioning agent.

The prior art also describes hair conditioning compositions as including tertiary amidoamine salts. For example, US 4,275,055 discloses a pearlescent hair conditioner composition including a quaternised tertiary amidoamine, a quaternary ammonium compound and, optionally, a tertiary amidoamine (stearamidoethyldiethylamine). US 4,777,037 discloses a hair conditioner composition comprising a polydimethylcyclosiloxane, a quaternary-nitrogen

conditioning agent having two long alkyl chains and two short alkyl chains, a long chain fatty alcohol and a tertiary amidoamine.

A problem with hair conditioning compositions based on tertiary amidoamine salts is that they tend to perform poorly with regard to wet stage attributes such as smoothness, slippery feel and ease of combing at the wet stage. These particular properties are generally very important conditioner attributes for consumers.

We have found that the wet stage performance of a hair conditioning composition based on tertiary amidoamine salt can be surprisingly enhanced by inclusion therein of a silicone gum as an auxiliary conditioning agent.

Summary of the Invention

The present invention provides a hair conditioning composition having improved wet stage conditioning performance comprising:

(a) as a principal conditioning agent, an acid-neutralised amidoamine compound, wherein the amidoamine compound has the general structural formula (I):

R1 - C (O) - NH - R2 - N(R3)(R4) (I)

wherein R1 is a fatty acid chain containing from 12 to 22 carbon atoms, R2 is an alkylene group containing from one to

four carbon atoms, and R3 and R4 are, independently, an alkyl group having from one to four carbon atoms, and

(b) as an auxiliary conditioning agent, a silicone component which comprises a silicone gum with a viscosity greater than 1 Mcs, a silicone fluid with a viscosity of less than 100 kcs, and an amino functionalised silicone, and

(c) an aqueous carrier.

DETAILED DESCRIPTION AND PREFERRED EMBODIMENTS

Principal Conditioning Agent

The principal conditioning agent in compositions of the invention is an acid-neutralised amidoamine compound, wherein the amidoamine compound has the general structural formula (I):

$$R1 - C(O) - NH - R2 - N(R3)(R4) \qquad (I)$$

wherein R1 is a fatty acid chain containing from 12 to 22 carbon atoms, R2 is an alkylene group containing from one to four carbon atoms, and R3 and R4 are, independently, an alkyl group having from one to four carbon atoms.

Examples of suitable amidoamine compounds of general structural formula (I) include stearamidopropyl dimethylamine, stearamidopropyl diethylamine,

stearamidoethyl dimethylamine, stearamidoethyl diethylamine, palmitamidopropyl dimethylamine, behenamidopropyl dimethylamine, myristamidopropyl dimethylamine, oleamidopropyl dimethylamine, ricinoleamidopropyl dimethylamine, and combinations thereof.

The composition of the present invention suitably includes from 0.1 to 10%, preferably from 0.1 to 5.0%, ideally from 0.1 to 2.0% by weight of the amidoamine compound, based on the total weight of the composition.

The acid used to neutralise the amidoamine compound can be essentially any organic acid or mineral acid of sufficient acid strength to neutralise a free amine nitrogen. Such acids include hydrochloric acid, sulphuric acid, nitric acid, phosphoric acid, lactic acid, citric acid, tartaric acid, acetic acid, gluconic acid, glycolic acid and propionic acid, or combinations thereof. A preferred acid is lactic acid, since neutralisation of the amidoamine compound with this acid yields an exceptionally stable composition.

In general, a sufficient amount of acid is added to neutralise the amidoamine compound and to adjust the final pH of the composition to within a range of from about 2.5 to about 6, preferably in a pH range of from about 3 to about 5.

Auxiliary conditioning agent

The auxiliary conditioning agent in compositions of the invention is a silicone component which comprises a silicone gum with a viscosity greater than 1 Mcs, a silicone fluid with a viscosity of less than 100 kcs, and an amino functionalised silicone.

Preferably, the total silicone content of the composition of the invention is in the region of 0.1 to 20%, based on the total weight of the composition.

Suitably, the silicone gum of viscosity greater than 1Mcs comprises less than 50% by weight, the silicone fluid of viscosity less than 100kcs comprises greater than 30% by weight, and the amino functionalised silicone comprises less than 10% by weight, based on the total silicone content of the silicone component of the composition.

In a highly preferred aspect of the invention, the silicone component of the composition may be provided as a single blend, which may be added to the composition during manufacture. This single blend may simply be in the form of a silicone mixture which can be added to the composition during manufacture, or it may be in an alternative form such as an aqueous emulsion which may itself be added to the composition during manufacture. Pre-formed aqueous emulsions of silicone may have advantages in that they themselves may be easier to handle or process than the "raw" silicone ingredients of the silicone component. In any event, when added to the hair treatment composition, the silicone component becomes the internal phase of an emulsion

which itself constitutes the composition, and which is preferably water based.

A further feature of the invention is that the silicone present in the composition, by virtue of having been added as an already homogenised mixture, is present in the hair treatment composition as a homogeneous mixture of silicones. That is, each silicone droplet in the composition will have essentially the same composition and will comprise a mixture (typically a solution) of the three types of silicone which together make up the silicone component of the composition, i.e silicone gum, silicone fluid and amino functionalised silicone.

The silicone component of the composition of the invention comprises three types of silicone, which may broadly be stated as being a silicone gum, a silicone fluid, and an amino functionalised silicone. These three types of silicone may be further characterised as follows.

Silicone Gum

The silicone gum is typically present in the silicone component at a level of from 0.01 to 50%, preferably from 1 to 40%, ideally from 10 to 35% by weight based on the total weight of the silicone component.

Preferred silicone gums are polydiorganosiloxanes, preferably derived from suitable combinations of $R_3SiO_{0.5}$

and R_2SiO units, where each R independently represents an alkyl, alkenyl (e.g. vinyl), alkaryl, aralkyl or aryl (e.g. phenyl) group. R is most preferably methyl.

The silicone gum has a viscosity of greater than 1 Mcs. The viscosity can be measured by means of a glass capillary viscometer as set out further in Dow Corning Corporate Test Method CTM004, July 20 1970.

Preferred silicone gums for use in the silicone component of compositions of the invention are polydimethylsiloxanes (which have the CTFA designation dimethicone), optionally having end groups such as hydroxyl. Good results have been obtained with dimethicone. Suitable materials include gums SE30, SE54 and SE76, available from General Electric Silicones.

Silicone Fluid

A further ingredient of the silicone component of the composition of the invention is a silicone fluid.

The silicone fluid is typically present in the silicone component at a level of from 30 to 95%, preferably from 40 to 80%, ideally from 50 to 70% by weight based on the total weight of the silicone component.

Preferred silicone fluids are polydiorganosiloxanes, preferably also derived from suitable combinations of

$R_3SiO_{0.5}$ and R_2SiO units, where each R independently represents an alkyl, alkenyl (e.g. vinyl), alkaryl, aralkyl or aryl (e.g. phenyl) group. R is most preferably methyl.

The silicone fluid has a viscosity of less than 100 kcs. The viscosity can be measured by means of a glass capillary viscometer as described above under "Silicone Gum".

Preferred silicone fluids for use in the silicone component of compositions of the invention are polydimethylsiloxanes (which have the CTFA designation dimethicone), optionally having end groups such as hydroxyl. Good results have been obtained with dimethicone. Suitable materials include the DC200 series of silicone fluids, available from Dow Corning (e.g. DC200, viscosity 350 cst), or SF96 or the VISCASIL series of silicones, available from General Electric Silicones.

A further contemplated embodiment of the invention is that the silicone gum and silicone fluid may be sourced as a single pre-prepared solution. Such solutions may themselves have benfits in terms of ease of handling. Examples of such pre-prepared blends include Q2-1403 available from Dow Corning, or CF 1251, available from General Electric Silicones.

Amino functionalised silicone

The third ingredient of the silicone component of the composition is an amino functionalised silicone.

The amino functionalised silicone is typically present in the silicone component at a level of from 0.1 to 10 %, preferably from 1 to 10% by weight based on the total weight of the silicone component.

It is preferred that the amino functionalised silicone comprises no more than 10% by weight of the silicone component, firstly in order to minimise the cost of the silicone component, but also to ease emulsification of the silicone component.

Suitable amino functionalised silicones are described in EP 455,185. Suitable amino functionalised silicones include trimethylsilylamodimethicone as depicted below, and are sufficiently water insoluble so as to be useful in compositions of the invention:

$Si(CH_3)_3 - O - [Si(CH_3)_2 - O -]_x - [Si\ (CH_3)\ (R - NH - CH_2CH_2\ NH_2) - O -]_y - Si\ (CH_3)_3$

wherein x + y is a number from about 50 to about 500, and the mole % amine functionality is in the range of from about 0.7 to about 8%, and wherein R is an alkylene group having from 2 to 5 carbon atoms. Preferably, the number x + y is in the range of from about 100 to about 300, and the mole % amine functionality is in the range of from about 2 to about 6%.

Examples of amino functionalised silicones useful in the silicone component of the composition of the invention are Q2-8220 and Q2-8466 fluids, available from Dow Corning, and also SF-1708-D1, available from General Electric Silicones.

As described above, it is a highly preferred aspect that the silicone component of the composition is provided as a single blend, which may be added to the composition during manufacture. This single blend may simply be in the form of a silicone mixture which can be added to the composition during manufacture, or it may be in an alternative form such as an aqueous emulsion which may itself be added to the composition during manufacture.

An aqueous emulsion is the preferred form for such a single blend, most preferably a mechanically-formed aqueous emulsion. In such emulsions, it is highly preferable that the emulsion additionally includes at least one emulsifier in order to stabilise the silicone emulsion.

Suitable emulsifiers are well known in the art and include anionic and nonionic surfactants. Examples of anionic surfactants used as emulsifiers for the silicone particles are alkylarylsulphonates, e.g., sodium dodecylbenzene sulphonate, alkyl sulphates e.g., sodium lauryl sulphate, alkyl ether sulphates, e.g., sodium lauryl ether sulphate nEO, where n is from 1 to 20 alkylphenol ether sulphates, e.g., octylphenol ether sulphate nEO where n is from 1 to 20, and sulphosuccinates, e.g., sodium dioctylsulphosuccinate.

Examples of nonionic surfactants used as emulsifiers for the silicone particles are alkylphenol ethoxylates, e.g., nonylphenol ethoxylate nEO, where n is from 1 to 50, alcohol ethoxylates, e.g., lauryl alcohol nEO, where n is from 1 to 50, ester ethoxylates, e.g., polyoxyethylene monostearate where the number of oxyethylene units is from 1 to 30.

Preferably, the average particle size of the silicone droplets in the emulsion and also in the final composition is less than 20 microns, more preferably less than 10 microns. A smaller silicone particle size enables a more uniform distribution of silicone on the hair for the same amount of silicone in the composition.

Silicone particle size may be measured by means of a laser light scattering technique, for example using a 2600D Particle Sizer from Malvern Instruments.

A particularly suitable emulsion for use as the silicone component of the composition of the invention is an emulsion containing silicone gum, silicone fluid and an aminofunctionalised silicone in a nonionic surfactant base, of silicone particle size 5 microns.

Aqueous Carrier

The carrier of the composition of the invention is predominantly water, but non-aqueous solvents also can be used in order to help solubilise ingredients that are not sufficiently soluble in water. Suitable non-aqueous solvents

include the lower alcohols like ethyl alcohol and propyl alcohol; polyols like glycerol; glycols or glycol ethers, like 2-butoxyethanol, ethylene glycol, ethylene glycol monoethyl ether, propylene glycol and diethylene glycol monoethyl ether or monomethyl ether and mixtures thereof. These non-aqueous solvents can be present in the composition of the invention in an amount of from 1 to 100%, preferably 5 to 50%, by weight based on the total weight of the vehicle of the composition of the invention.

Cationic Polymer

The composition of the invention may, optionally, also comprise a cationic polymer to enhance conditioning performance.

The cationic polymer may be a homopolymer or be formed from two or more types of monomers. The molecular weight of the polymer will generally be between 5 000 and 10 000 000, typically at least 10 000 and preferably in the range 100 000 to about 2 000 000. The polymers will have cationic nitrogen containing groups such as quaternary ammonium or protonated amino groups, or a mixture thereof.

The cationic charge density of the cationic polymer, which is defined as the reciprocal of the molecular weight of a monomeric unit of the polymer containing 1 charge, has been found to need to be at least 0.1 meq/g, preferably above 0.8 or higher. The cationic charge density should not exceed 4 meq/g, it is preferably less than 3 and more preferably less

than 2 meq/g. The charge density can be measured using conductimetric analysis and should be within the above limits at the desired pH of use, which will in general be from about 3 to 9 and preferably between 4 and 8.

The cationic nitrogen-containing group will generally be present as a substituent on a fraction of the total monomer units of the cationic polymer. Thus when the polymer is not a homopolymer it can contain spacer non-cationic monomer units. Such polymers are described in the CTFA Cosmetic Ingredient Directory, 3rd edition. The ratio of the cationic to non-cationic monomer units is selected to give a polymer having a cationic charge density in the required range.

A preferred type of cationic polymer in compositions of the invention is a cationic guar gum derivative, such as guar hydroxypropyltrimonium chloride (Commercially available from Celanese Corp. in their Jaguar trademark series).

Examples are JAGUAR C13S, which has a low degree of substitution of the cationic groups and high viscosity. JAGUAR C15, having a moderate degree of substitution and a low viscosity, JAGUAR C17 (high degree of substitution, high viscosity), JAGUAR C16, which is a hydroxypropylated cationic guar gum derivative containing a low level of substituent groups as well as cationic quaternary ammonium groups, and JAGUAR 162 which is a high transparency, medium viscosity cationic guar gum derivative having a low degree of substitution.

A particularly preferred cationic guar gum derivative is JAGUAR C13S with a cationic charge density of 0.8meq/g.

The cationic polymer may be present in an amount of from 0.01 to 10%, preferably from 0.01 to 2.0%, more preferably from 0.1 to 1.0% by weight based on the total weight of the composition.

Fatty Alcohol

Long chain fatty alcohols having from about 10 to about 18 carbon atoms in the alkyl chain also can be included, optionally, in the composition of the present invention to enhance consumer appeal and provide thickening.

The fatty alcohols can be used alone, or in admixture with each other. Suitable fatty alcohols include lauryl alcohol, oleyl alcohol, cetyl alcohol, myristyl alcohol, stearyl alcohol, and mixtures thereof. Mixtures of cetyl and stearyl alcohol are particularly preferred.

Alkoxylated, (e.g. ethoxylated or propoxylated) fatty alcohols having from about 12 to about 18 carbon atoms in the alkyl chain can be used in place of, or in addition to, the fatty alcohols themselves. Suitable examples include ethylene glycol cetyl ether, polyoxyethylene (2) stearyl ether, polyoxyethylene (24) cetyl ether, and mixtures thereof.

The fatty alcohol and/or alkoxylated fatty alcohol may be present in an amount of from 0.5 to 10%, preferably from 1 to 5% by weight based on the total weight of the composition.

Compositions of this invention may contain any other ingredient normally used in hair treatment formulations. These other ingredients may include viscosity modifiers, preservatives, colouring agents, polyols such as glycerine and polypropylene glycol, chelating agents such as EDTA, antioxidants, fragrances, antimicrobials and sunscreens. Each of these ingredients will be present in an amount effective to accomplish its purpose. Generally these optional ingredients are included individually at a level of up to about 5% by weight of the total composition.

Preferably, compositions of this invention also contain adjuvants suitable for hair care. Generally such ingredients are included individually at a level of up to 2%, preferably up to 1%, by weight of the total composition.

Among suitable hair care adjuvants, are:

(i) natural hair root nutrients, such as amino acids and sugars. Examples of suitable amino acids include arginine, cysteine, glutamine, glutamic acid, isoleucine, leucine, methionine, serine and valine, and/or precursors and derivatives thereof. The amino acids may be added singly, in mixtures, or in the form of peptides, e.g. di- and tripeptides. The amino acids may also be added in the form

of a protein hydrolysate, such as a keratin or collagen hydrolysate. Suitable sugars are glucose, dextrose and fructose. These may be added singly or in the form of, e.g. fruit extracts. A particularly preferred combination of natural hair root nutrients for inclusion in compositions of the invention is isoleucine and glucose. A particularly preferred amino acid nutrient is arginine.

(ii) hair fibre benefit agents. Examples are:

- ceramides, for moisturising the fibre and maintaining cuticle integrity. Ceramides are available by extraction from natural sources, or as synthetic ceramides and pseudoceramides. A preferred ceramide is Ceramide II, ex Quest. Mixtures of ceramides may also be suitable, such as Ceramides LS, ex Laboratoires Serobiologiques.

Mode of Use

The compositions of the invention are primarily intended for topical application to the hair and/or scalp of a human subject to improve hair fibre surface properties such as smoothness, softness, manageability, cuticle integrity, and shine.

The invention will now be further illustrated by the following, non-limiting Examples:

EXAMPLES

Example 1

A hair rinse was prepared having the ingredients as shown in the following table:

Hair Rinse

Ingredient	%(w/w)
Stearamidopropyl dimethylamine	1.0
Stearyl alcohol	4.0
Paraffin wax	1.0
Cetyl palmitate	0.5
Cationic polymer(Jaguar C13S)	0.3
Glycerine	0.6
Gum/fluid/amino silicone(aqueous emulsion, 60%)	3.33
Lactic acid	0.44
Preservative(Parahydroxy benzoate)	0.2
Perfume	aq.
Water	To 100%

Example 2

A hair treatment was prepared having the ingredients as shown in the following table:

Hair Treatment

Ingredient	%(w/w)
Stearamidopropyl dimethylamine	1.0
Stearyl alcohol	10.0
Cationic polymer(Jaguar C13S)	0.3
Glycerine	0.6
Gum/fluid/amino silicone(aqueous emulsion, 60%)	6.67
Lactic acid	0.44
Preservative(Parahydroxy benzoate)	0.2
Perfume	aq.
Water	To 100%

CLAIMS

1. A hair conditioning composition having improved wet stage conditioning performance comprising:

(a) as a principal conditioning agent, an acid-neutralised amidoamine compound, wherein the amidoamine compound has the general structural formula (I):

R1 - C (O) - NH - R2 - N(R3)(R4) (I)

wherein R1 is a fatty acid chain containing from 12 to 22 carbon atoms, R2 is an alkylene group containing from one to four carbon atoms, and R3 and R4 are, independently, an alkyl group having from one to four carbon atoms, and

(b) as an auxiliary conditioning agent, a silicone component which comprises a silicone gum with a viscosity greater than 1 Mcs, a silicone fluid with a viscosity of less than 100 kcs, and an amino functionalised silicone, and

(c) an aqueous carrier.

2. A composition according to claim 1, in which the acid-neutralised amidoamine compound is selected from the group consisting of stearamidopropyl dimethylamine, stearamidopropyl diethylamine, stearamidoethyl dimethylamine, stearamidoethyl diethylamine, palmitamidopropyl dimethylamine, behenamidopropyl dimethylamine, myristamidopropyl dimethylamine,

oleamidopropyl dimethylamine, ricinoleamidopropyl dimethylamine, and combinations thereof.

3. A composition according to claim 1 or claim 2, in which the acid used to neutralise the amidoamine compound is lactic acid.

4. A composition according to any one of claims 1 to 3, in which the silicone gum of viscosity greater than 1Mcs comprises less than 50% by weight, the silicone fluid of viscosity less than 100kcs comprises greater than 30% by weight, and the amino functionalised silicone comprises less than 10% by weight, based on the total silicone content of the silicone component of the composition.

5. A composition according to any one of claims 1 to 4 in which the silicone component is provided as a single blend, in the form of an aqueous emulsion.

6. A composition according to claim 5, in which the aqueous emulsion is emulsified with a nonionic surfactant and in which the average particle size of the silicone droplets in the emulsion and also in the final composition is less than 20 microns.

7. A composition according to any one of claims 1 to 6, which further comprises a cationic polymer.

8. A composition according to claim 7, in which the cationic polymer is guar hydroxypropyltrimonium chloride, in an amount of from 0.01 to 10% by weight based on the total weight of the composition.

9. A composition according to any one of claims 1 to 8, which further comprises a fatty alcohol and/or an alkoxylated fatty alcohol, in an amount of from 0.5 to 10% by weight based on the total weight of the composition.

10. A composition according to any one of claims 1 to 9, which further comprises a polyol selected from glycerine, polypropylene glycol and mixtures thereof.